

Appendix B

Fish and Wildlife Species of Occurrence by Habitat

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**FISH AND WILDLIFE SPECIES
OCCURRENCE BY HABITAT,
TONGUE RIVER RAILROAD PROJECT AREA**

For:

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INTRODUCTION

The attached fish and wildlife species/habitat matrix was prepared to document both the species that have been recorded or may potentially occur in the vicinity of the Tongue River Railroad project, and the habitats within which they have been recorded, or may potentially occur. Additionally, the matrix (and attached figures) provides information on the percentage of each habitat type along the Tongue River Railroad and 200-foot project area.

METHODS

The 10 habitats used to form this matrix were first identified in the 1983 Draft Environmental Impact Statement (hereafter 1983 DEIS) and 1985 Final Environmental Impact Statement (hereafter 1985 FEIS) for Finance Docket No. 30186, which encompassed the Tongue River Railroad from Miles City to Terminus Point No. 1 about nine miles south of Ashland, Montana. These habitats were retained for the analysis of an additional rail line from Terminus Point No. 1 to Decker, Montana in the 1992 Draft Environmental Impact Statement (hereafter 1992 DEIS) and 1996 Final Environmental Impact Statement (hereafter 1996 FEIS) for Finance Docket No. 30186 (Sub. No. 2). The 10 habitats were again considered in the Environmental Report for the Western Alignment (hereafter 1998 Environmental Report) for Finance Docket No. 30186 (Sub-No. 3).

These habitats are:

Pine/juniper comprised of forested areas dominated by ponderosa pine (*Pinus ponderosa*) and/or Rocky Mountain juniper (*Juniperus scopulorum*). Stands may vary from open savannahs to dense thickets. Usually occurs on rolling hills or steep ridges, often on north or east-facing slopes, and generally increases to the south along the route of Tongue River Railroad.

Prairie. Areas that are largely dominated by a mixture of native grasses, forbs and/or sub-shrubs. Shrubs or trees may be present but are generally a minor component. May occur in a variety of areas from rolling uplands to riverine terraces and drainages.

Silver sagebrush/grassland, dominated by silver sagebrush (*Artemisia cana*). Usually occurs in drainages throughout the region or on river terraces in the Tongue River valley.

Big sagebrush/grassland, dominated by big sagebrush (*Artemisia tridentata*). Usually found on rolling upland hills and benches.

Skunkbush sumac/grassland, dominated by skunkbush sumac (*Rhus trilobata*). Generally occurs on south or west slopes of ridges but may also occur on upland benches.

Greasewood/grassland. This habitat generally occurs over somewhat saline or sodic soils, usually in drainages or on terraces along the Tongue River, and is dominated by black greasewood (*Sarcobatus vermiculatus*).

Breaks. This habitat is generally characterized by very steep, sometimes highly eroded slopes often intermixed with sandstone or scoria outcrops. The vegetation on these sites may be highly variable, from grassland to ponderosa pine and juniper to sparsely vegetated. Due to the topography of this habitat, the route of the Tongue River Railroad has been located to minimize, to the extent practicable, contact with this habitat type.

Deciduous tree/shrub. Usually occurring in drainages or along the banks of rivers and streams, this habitat is dominated by trees such as cottonwood (*Populus deltoides*), green ash (*Fraxinus pennsylvanica*) and boxelder (*Acer negundo*). The mesic shrub component may be highly variable, but common shrubs in the area are serviceberry (*Amelanchier alnifolia*), black hawthorn (*Crataegus douglasii*), chokecherry (*Prunus virginiana*), currant (*Ribes* spp.), rose (*Rosa* spp.) and snowberry (*Symphoricarpos albus*).

Agriculture/disturbed sites/pasture. For the purposes of this analysis, this habitat complex is comprised of sites where the natural vegetation component has been dramatically altered by human activity. Agricultural fields may be composed of dryland crops such as wheat or barley, or irrigated hay fields. Disturbed sites include building sites, gravel pits and roads. Pasture is defined as fields where native vegetation has been disturbed and largely replaced by non-native grass species, such as crested wheatgrass (*Agropyron cristata*).

Aquatic. In the 1983 DEIS, 1985 FEIS, 1992 DEIS and 1996 FEIS, this habitat was generally defined as cattail (*Typha* spp.)/sedge (*Carex* spp.) stands bordering open water. For the purposes of this report, however, the definition of this habitat has been expanded to include the open water of the Tongue River and its perennial tributaries, which may support fish, as well as the open water of stock ponds or small reservoirs which may provide habitat for a variety of wildlife species.

The habitats were then preliminary mapped on aerial images. Of the ten types, however, only seven of the habitats were delineated. The Silver sagebrush/grassland, Big sagebrush/grassland, Greasewood/grassland and the Skunkbush sumac/grassland habitats are grouped together into a habitat named Prairie/Shrub. The habitat types were then ground-truthed in the spring of 2004 during an aerial and ground survey. During this survey, observations were made for

the specific Prairie/Shrub habitats and approximate percentages are calculated. Additionally, the habitat mapping was compared to other vegetation mapping done by Olson-Elliott and Associates (1980c) for environmental baseline study report for the proposed Montco mine project.

The potential occurrence of fish and wildlife species in the region encompassing the Tongue River Railroad was determined from several published sources, including Holton and Johnson (1996) for fish, Reichel and Flath (1995) for amphibians and reptiles, Thompson (1982) and Hart et al. (1998) for mammals, and the Montana Bird Distribution Committee (1996) for birds. Additionally, in 2003, Redmond et al (1988), MFISH (2002), and Montana Bird Distribution Online Database (2001) were used to update the species occurrences in the list of species. Habitat preference for each species was determined from a variety of sources, listed in the LITERATURE CITED below.

Actual occurrence of these species in the vicinity of the Tongue River Railroad project was determined from a review of published and unpublished reports from the area, which are listed in the LITERATURE CITED and in the footnotes to Table 1. In addition, the wildlife annual monitoring reports from the Montco Mine and from the Decker and Spring Creek Mines were reviewed in the offices of the Montana Department of Environmental Quality, Industrial and Energy Minerals Bureau in Helena, Montana. These reports provided the greatest amount of documentation of wildlife species in the region. The above listed references were then used to update the species in 2003.

It should be noted that the potential and documented occurrences of fish and wildlife species were determined from a large region surrounding the Tongue River Railroad project. For example, the potential occurrence of mammals and birds was determined from two geographic units called a latilongs that encompass the railroad route from Miles City to Decker. Each latilong is defined as the area delineated by one degree of latitude and one degree of longitude, and is about 3,000 square miles in size. Thus, the potential species lists in Table 1 were determined on the basis of a regional area of about 6,000 square miles. For the Montana Bird Distribution Online Database (2001), potential occurrences were also queried for the two latilongs and additional two other quarter latilongs (approximate total of 7,500 square miles) from 1996 to 2003 occurrences. Redmond et al. (1988) was queried for potential occurrence by examining the potential distribution maps from this reference and comparing it to the 116 miles of the entire proposed railroad. The MFISH (2002) potential occurrences were queried for fish species by waterbody. Montana Natural Heritage Program Database (2003) was queried to determine the occurrences of species of concern and threatened and endangered species of Montana. The occurrences noted for Rosebud, Bighorn, and Custer Counties were included. Montana Natural Heritage Program Spatial Distribution Maps (2003) were queried to determine which mammal species had been known to occur in the project area.

The railroad will disturb small acreages of any given habitat. The complete railroad will be about 116 miles long via the Western Alignment, and it was estimated that the entire railroad would require about 3,000 right-of-way acres.

RESULTS AND DISCUSSION

Table 1 presents the matrix of potential fish and wildlife species in the region encompassing the Tongue River Railroad in 10 major habitats potentially crossed by the railroad. Figure 1 shows the fisheries zones of the Tongue River referenced in Table 1. Figure 2 show the 7 habitat types used in Table 1.

Wildlife habitat use reported in Table 1 primarily represents breeding and foraging habitats commonly used by each species. Even though a given species may not be listed for a certain habitat type, it is possible that this species could be found in microsite conditions within that habitat type. In addition, many species may travel through or temporarily use many habitat types, even though these habitats are not commonly used for breeding or foraging.

A total of 49 fish, 7 amphibians, 14 reptiles, 64 mammals and 245 birds potentially occur in the two latilongs and the additional two quarter latilongs encompassing the Tongue River Railroad through 2003 (Table 1).

The U.S. Fish and Wildlife Service (USFWS) had determined (letter dated January 19, 1999 from Kemper M. McMaster, field supervisor of the Montana Field Office of the USFWS to Dana White, Section of Environmental Analysis of the Surface Transportation Board) that only six fish or wildlife species protected by the Endangered Species Act (ESA) of 1973, as amended, are of potential relevance to the Tongue River Railroad project: black-footed ferret (*Mustela nigripes*), bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), mountain plover (*Charadrius montanus*), swift fox (*Vulpes velox*), and sturgeon chub (*Macrhybopsis gelida*). Using the June, 2003, USFWS endangered and threatened species list and Hanebury, personal comm. (2003), there are six threatened or endangered species and one species of federal conservation concern in the three counties that the Tongue River Railroad crosses. The black-footed ferret, pallid sturgeon (*Scaphirhynchus albus*), whooping crane (*Grus americana*) and interior least tern (*Sterna antillarum athalassos*) are listed as endangered, the bald eagle is listed as threatened, the black-tailed prairie dog (*Cynomys ludovicianus*) is a candidate species, and the mountain plover is species of conservation concern that could occur in the three counties in which the Tongue River Railroad crosses (USFWS 2003a, Nordstrom, personal comm, 2003; Hanebury, personal comm. 2003).

Fish and wildlife species diversity by habitat, in descending order, are deciduous tree/shrub (177 species), aquatic (164 species), pine/juniper (147 species), agriculture/disturbed sites/pasture (124 species), prairie (115 species), big

sagebrush/grassland (106 species), silver sagebrush/grassland (98 species), greasewood/grassland (90 species), breaks (79 species) and skunkbush sumac/grassland (76 species). As might be expected, riparian and forested habitats support the greatest diversity of wildlife, while non-forested upland habitats generally support fewer species.

The Tongue River Railroad primarily will affect non-forested upland habitats and will affect limited riparian (deciduous tree/shrub) and aquatic habitat (1983 DEIS, 1992 DEIS, 1998 Environmental Report). Relative percentages for habitat types were determined by delineating habitat polygons on aerial images and field-verifying these polygons. Within the the 200-ft ROW, **Aquatic** habitat consists of less than 1% of acreage affected; the **Breaks** habitat consists of approximately 16% of acreage affected; **Deciduous Tree/Shrub** habitat consists of approximately 1% of acreage affected; **Pine/ Juniper** habitat consists of approximately 6% of acreage; **Prairie / Shrub** habitat consists of approximately 47% of acreage affected; **Prairie** consists of approximately 25% of acreage affected; and **Agricultural/Disturbed Sites/Pasture** habitat consists of approximately 5% of acreage (urban / developed habitat is also less than 1% of acreage affected). Of the Prairie / Shrub habitat, Silver sagebrush/grassland comprised approximately 65% of the Prairie/Shrub habitat; Big sagebrush/grassland comprised approximately 7% of the Prairie/Shrub habitat; Greasewood/grassland comprised approximately 2% of the Prairie/Shrub habitat; and approximately 25% was undetermined.

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Table 1. Potential Fish and Wildlife Species Occurrence by Habitat, Tongue River Railroad Project Area.^a

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
FISH										
ACIPENSERIDAE Shovelnose Sturgeon (<i>Scaphirhynchus platyrhynchus</i>) ^f										I
POLYDONTIDAE Paddlefish (<i>Polyodon spathula</i>) ^{f,i,i}										I
ESOCIDAE Northern Pike (<i>Esox lucius</i>) ^f										I-V
HIODONTIDAE Goldeye (<i>Hiodon alosoides</i>) ^f										I-V
CATOSTOMIDAE Shorthead Redhorse (<i>Moxostoma macrolepidotum</i>) ^f										I-V
White Sucker (<i>Catostomus commersoni</i>) ^f										I-V
Longnose Sucker (<i>Catostomus catostomus</i>) ^f										I-V
Mountain Sucker (<i>Catostomus platyrhynchus</i>) ^f										I-V
Blue Sucker (<i>Cycleptus elongatus</i>) ^{f,i,i}										I
Smallmouth Buffalo (<i>Ictiobus bubalus</i>) ^f										I
Bigmouth Buffalo (<i>Ictiobus cypmellus</i>) ^{f (only)}										I
River Carpsucker (<i>Carpionodes carpio</i>) ^f										I-V
CYPRINIDAE Common Carp (<i>Cyprinus carpio</i>) ^f										I-V
Goldfish (<i>Carassius auratus</i>) ^f										I-V
Golden Shiner (<i>Notemigonus crysoleucas</i>)										V
Lake Chub (<i>Couesius plumbeus</i>)										I-V
Creek Chub (<i>Semotilus atromaculatus</i>) ^f										I-V
Flathead Chub (<i>Platygobio gracilis</i>) ^f										I-V
Sturgeon Chub (<i>Machyropsis gelida</i>) ^{f,i}										I
Longnose Dace (<i>Rhinichthys cataractae</i>) ^f										I-V

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE- WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/ DISTURBED PASTURE	AQUATIC ^c
Fathead Minnow (<i>Pimephales promelas</i>) ^f										I-V
Brassy Minnow (<i>Hybognathus hankinsoni</i>) ^f										I-V
Western Silvery Minnow (<i>Hybognathus argyritis</i>) ^f										I-V
Plains Minnow (<i>Hybognathus placitus</i>) ^f										I-V
Emerald Shiner (<i>Notropis atherinoides</i>) ^f										I-V
Sand Shiner (<i>Notropis stramineus</i>) ^f										I-V
Spottail Shiner (<i>Notropis hudsonius</i>) ^{f (only)}										V
SALMONIDAE Rainbow Trout (<i>Oncorhynchus mykiss</i>) ^f										I-V
Yellowstone Cutthroat Trout (<i>Oncorhynchus clarki bouvieri</i>) ^{f(only)}										I-V
Brown Trout (<i>Salmo trutta</i>) ^f										I-V
Mountain Whitefish (<i>Prosopium williamsoni</i>) ^f										V
ICTALURIDAE Channel Catfish (<i>Ictalurus punctatus</i>) ^f										I-V
Black Bullhead (<i>Ameiurus melas</i>) ^f										I-V
Yellow Bullhead (<i>Ameiurus natalis</i>) ^f										I-V
Stonecat (<i>Noturus flavus</i>) ^f										I-V
GADIDAE Burbot (<i>Lota lota</i>) ^f										I-II
CENTRARCHIDAE Black Crappie (<i>Pomoxis nigromaculatus</i>) ^f										I-V
White Crappie (<i>Pomoxis annularis</i>) ^f										I-V
Pumpkinseed (<i>Lepomis gibbosus</i>) ^f										I-V
Bluegill (<i>Lepomis macrochirus</i>)										I-V
Green Sunfish (<i>Lepomis cyanellus</i>) ^f										I-V
Rock Bass (<i>Ambloplites rupestris</i>) ^f										I-V

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE- WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/ DISTURBED PASTURE	AQUATIC ^c
Smallmouth Bass (<i>Micropterus dolomieu</i>) ^f										I-V
Largemouth Bass (<i>Micropterus salmoides</i>) ^f										I-V
PERCIDAE Yellow Perch (<i>Perca flavescens</i>) ^f										I-V
Walleye (<i>Stizostedion vitreum</i>) ^f										I-V
Sauger (<i>Stizostedion canadense</i>) ^f										I-V
AMPHIBIANS										
CAUDATA Tiger Salamander (<i>Ambystoma tigrinum</i>) ^{d,e,g,k,j}		x	x					x	x	x
SALIENTIA Plains Spadefoot (<i>Spea bombifrons</i>) ^{g,k}		x	x	x		x				x
Woodhouses=s Toad (<i>Bufo woodhousii</i>) ^{d,e,g,k}	x	x	x	x	x	x		x	x	x
Great Plains Toad (<i>Bufo cognatus</i>) ^{e,g,k}		x		x						x
Western Chorus Frog (<i>Pseudacris maculata</i>) ^{d,e,g,k}	x	x	x			x		x	x	x
Northern Leopard Frog (<i>Rana pipiens</i>) ^{d,e, g,k}										x
REPTILES										
TESTUDINES Snapping Turtle (<i>Chelydra serpentina</i>) ^{d,e,g,k,i}										x
Painted Turtle (<i>Chrysemys picta</i>) ^{d,e,g,k}										x
Spiny Softshell (<i>Apalone spinifera</i>) ^{d,g,i,k}										x
SQUAMATA Sagebrush Lizard (<i>Sceloporus graciosus</i>) ^{d,e,g,k}	x	x	x	x	x	x	x			
Greater Short-horned Lizard (<i>Phrynosoma hernandesi</i>) ^{e,g,k}	x	x	x	x	x	x	x			
Western Hognose Snake (<i>Heterodon nasicus</i>) ^{e,g,k,i}		x	x	x	x	x			x	
Racer (<i>Coluber constrictor</i>) ^{d,e,g,k}	x	x	x	x	x	x			x	
Gopher Snake (<i>Pituophis catenifer</i>) ^{d,e,g,k}	x	x	x	x	x	x	x	x	x	
Common Garter Snake (<i>Thamnophis sirtalis</i>) ^{e,g,k}	x	x	x	x	x	x		x	x	x

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Western terrestrial garter snake (<i>Thamnophis elegans</i>) ^{e,g,k}	x	x	x	x	x	x		x	x	x
Plains Garter Snake (<i>Thamnophis radix</i>) ^{d,e,g,k}	x	x	x	x	x	x		x	x	x
Western Prairie Rattlesnake (<i>Crotalus viridis</i>) ^{d,e,g,k}	x	x	x	x	x	x	x	x	x	
Milk Snake (<i>Lampropeltis triangulum</i>) ^{e,g,i,k}							x			
MAMMALS										
INSECTIVORA										
Hayden Shrew (<i>Sorex haydeni</i>) ^{d,e,g,i}	x	x	x	x	x	x	x	x	x	
Masked Shrew (<i>Sorex cinereus</i>) ^{g,j(only)}		x						x		
Vagrant Shrew (<i>Sorex vagrans</i>) ^{g(only)}	x							x		
Dusky (Montane) Shrew (<i>Sorex monticolus</i>) ^{g(only)}								x		
Dwarf Shrew (<i>Sorex nanus</i>) ^{j(only)}	x									
Preble's Shrew (<i>Sorex preblei</i>) ^{i(only)}		x	x	x						
Merriam's Shrew (<i>Sorex merriami</i>) ^{g,i,l(only)}		x	x	x				x		
CHIROPTERA										
Western Small-footed Myotis (<i>Myotis ciliolabrum</i>) ^{g,i}	x	x	x	x	x	x	x	x	x	x
Long-eared Myotis (<i>Myotis evotis</i>) ^{g,i}	x						x	x		x
Little Brown Myotis (<i>Myotis lucifugus</i>) ^{d,g,i}	x							x		x
Long-legged Myotis (<i>Myotis volans</i>) ^{g,i}	x									x
Silver-haired Bat (<i>Lasionyctaris noctivagans</i>) ^{g,i}	x	x	x	x		x		x	x	x
Spotted Bat (<i>Euderma maculatum</i>) ^{g,i}	x	x	x	x	x	x	x			x
Big Brown Bat (<i>Eptesicus fuscus</i>) ^{g,i}	x	x	x	x	x	x	x	x	x	x
Hoary Bat (<i>Lasiurus cinereus</i>) ^{g,i}	x							x		x
Townsend=s Big-eared Bat (<i>Plecotus townsendii</i>) ^{g,i}	X	x	x	x	x	x	x	x	x	x
Pallid Bat (<i>Antrozous pallidus</i>) ^{g,j(only)}							x			

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE- WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/ DISTURBED PASTURE	AQUATIC ^c
LAGOMORPHA Desert Cottontail (<i>Sylvilagus audubonii</i>) ^{d,e,g,i}	X		x	x	x	x	x	x		x
Mountain Cottontail (<i>Sylvilagus nuttallii</i>) ^{g,i (only)}	x		x	x				x		
White-tailed Jackrabbit (<i>Lepus townsendii</i>) ^{d,e,g,i}		x	x	x	x	x			x	
RODENTIA Least Chipmunk (<i>Tamias minimus</i>) ^{d,e,g,i}	X				x		x	x		
Yellow-bellied Marmot (<i>Marmota flaviventris</i>) ^{e,g,i}	x	x	x	x	x	x	x	x		
Thirteen-lined Ground Squirrel (<i>Spermophilus tridecemlineatus</i>) ^{d,e,g,i}		x							x	
Black-tailed Prairie Dog (<i>Cynomys ludovicianus</i>) ^{d,e,g,i,j}		x								
Fox Squirrel (<i>Sciurus niger</i>) ^{d,i}								x		
Red Squirrel (<i>Tamiasciurus hudsonicus</i>) ^{d,e,g,i}	x							x		
Northern Pocket Gopher (<i>Thomomys talpoides</i>) ^{d,e,g,i}	x	x	x	x	x	x		x	x	
Olive-backed Pocket Mouse (<i>Perognathus fasciatus</i>) ^{d,e,g,i}		x	x	x	x				x	
Ord=s Kangaroo Rat (<i>Dipodomys ordii</i>) ^{d,e,g,i}	x	x	x	x	x	x	x		x	
Beaver (<i>Castor canadensis</i>) ^{d,e,g,i}								x		x
Western Harvest Mouse (<i>Reithrodontomys megalotis</i>) ^{d,e,g,i}		x	x	x	x	x	x	x	x	
Deer Mouse (<i>Peromyscus maniculatus</i>) ^{d,e,g,i}	x	x	x	x	x	x	x	x	x	
White-footed Mouse (<i>Peromyscus leucopus</i>) ^{d,g,i}								x		
Northern Grasshopper Mouse (<i>Onychomys leucogaster</i>) ^{e,g,i}		x	x	x					x	
Bushy-tailed woodrat (<i>Neotoma cinerea</i>) ^{d,g,i}	x				x		x	x	x	
Meadow Vole (<i>Microtus pennsylvanicus</i>) ^{d,e,g,i}		x						x	x	
Prairie Vole (<i>Microtus ochrogaster</i>) ^{d,e,g,i}		x	x	x	x	x		x	x	
Long-tailed Vole (<i>Microtus longicaudus</i>) ^{g,i (only)}		x	x	x						
Sagebrush Vole (<i>Lagurus euatatus</i>) ^{d,g,i}			x	x						
Southern Red-backed Vole (<i>Clethrionomys gapperi</i>) ^{g (only)}								x		

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE- WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/ DISTURBED PASTURE	AQUATIC ^c
Muskrat (<i>Ondatra zibethicus</i>) ^{d,e,g,i}										x
House Mouse (<i>Mus musculus</i>) ^{d,j}									x	
Meadow Jumping Mouse (<i>Zapus princeps</i>) ^{d,g,i,j,i}		x							x	
Porcupine (<i>Erethizon dorsatum</i>) ^{g,j}	x	x	x	x	x	x	x	x	x	
CARNIVORA Coyote (<i>Canis latrans</i>) ^{d,e,g,i}	x	x	x	x	x	x	x	x	x	
Red Fox (<i>Vulpes vulpes</i>) ^{d,e,g,i}		x	x			x		x	x	
Swift Fox (<i>Vulpes velox</i>) ^g		x	x	x	x	x				
Black Bear (<i>Ursus americanus</i>) ^{d,e,g,i}	x						x			
Raccoon (<i>Procyon lotor</i>) ^{d,e,g,i}								x	x	x
Ermine (<i>Mustela erminea</i>) ^g	x	x	x	x	x	x	x	x	x	
Long-tailed Weasel (<i>Mustela frenata</i>) ^{d,e,g,i}	x	x	x	x	x	x	x	x	x	
Least Weasel (<i>Mustela nivalis</i>) ^{g,i(only)}		x	x	x						
Mink (<i>Mustela vison</i>) ^{d,e,g,i}								x		x
Badger (<i>Taxidea taxus</i>) ^{d,e,g,i}	x	x	x	x	x	x	x	x	x	
Striped Skunk (<i>Mephitis mephitis</i>) ^{d,e,g,i}	x	x	x	x	x	x	x	x	x	
River Otter (<i>Lutra canadensis</i>) ^{d,g,i}										x
Mountain Lion (<i>Felis concolor</i>) ^{d,g,i}	x	x	x	x	x	x	x	x	x	
Bobcat (<i>Felix rufus</i>) ^{d,e,g,i}	x	x	x	x	x	x	x	x	x	
ARTIODACTYLA Elk (<i>Cervus elaphus</i>) ^{e,g,i,j}	x	x	x	x	x	x	x	x	x	
Mule Deer (<i>Odocoileus hemionus</i>) ^{d,e,g,i,j}	x	x	x	x	x	x	x	x	x	
White-tailed Deer (<i>Odocoileus virginianus</i>) ^{d,e,g,i,j}	x	x	x	x	x	x	x	x	x	
Moose (<i>Alces alces</i>)								x		x
Pronghorn (<i>Antilocapra americana</i>) ^{d,e,g,i,j}	x	x	x	x	x	x			x	

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE- WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/ DISTURBED PASTURE	AQUATIC ^c
BIRDS										
GAVIIFORMES Common Loon (<i>Gavia immer</i>) ^e										x
PODICIPEDIFORMES Pied-billed Grebe (<i>Podilymbus podiceps</i>) ^{e,g,h}										x
Horned Grebe (<i>Podiceps auritus</i>) ^{e,g}										x
Eared Grebe (<i>Podiceps nigricollis</i>) ^{d,e,g}										x
Western Grebe (<i>Aechmophorus occidentalis</i>) ^e										x
PELECANIFORMES American White Pelican (<i>Pelecanus erythrorhynchos</i>) ^{e,h}										x
Double-crested Cormorant (<i>Phalacrocorax auritus</i>) ^{d,e,g,h}								x		x
CICONIIFORMES Great Blue Heron (<i>Ardea herodias</i>) ^{d,e,g,h}								x		x
Snowy Egret (<i>Egretta thula</i>) ^d								x	x	x
Cattle Egret (<i>Bubulcus ibis</i>)								x	x	x
Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>) ^{d,e,g}								x		x
ANSERIFORMES Tundra Swan (<i>Cygnus columbianus</i>) ^g										x
Trumpeter Swan (<i>Cygnus buccinator</i>) ^e										x
Greater White-fronted Goose (<i>Anser albifrons</i>) ^{e,g}									x	x
Snow Goose (<i>Chen caerulescens</i>) ^{e,g}									x	x
Ross's Goose (<i>Chen rossii</i>) ^{g (only)}										x
Canada Goose (<i>Branta canadensis</i>) ^{d,e,g,h}								x	x	x
Wood Duck (<i>Aix sponsa</i>) ^{d,e,g,h}								x		x
Green-winged Teal (<i>Anas crecca</i>) ^{d,e,g}										x
American Black Duck (<i>Anas rubripes</i>)									x	x
Mallard (<i>Anas platyrhynchos</i>) ^{d,e,g,h}									x	x

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Northern Pintail (<i>Anas acuta</i>) ^{d,e,g,h}									x	x
Blue-winged Teal (<i>Anas discors</i>) ^{d,e,g,h}										x
Cinnamon Teal (<i>Anas cyanoptera</i>) ^{e,g}										x
Northern Shoveler (<i>Anas clypeata</i>) ^{d,e,g,h}										x
Gadwall (<i>Anas strepera</i>) ^{d,e,g,h}										x
American Wigeon (<i>Anas americana</i>) ^{d,e,g}										x
Canvasback (<i>Aythya valisineria</i>) ^e										x
Redhead (<i>Aythya americana</i>) ^{d,e,g}										x
Ring-necked Duck (<i>Aythya collaris</i>) ^{d,e}										x
Lesser Scaup (<i>Aythya affinis</i>) ^{d,e}										x
Surf Scoter (<i>Melanitta perspicillata</i>) ^e										x
Common Goldeneye (<i>Bucephala clangula</i>) ^{d,e}										x
Barrow=s Goldeneye (<i>Bucephala islandica</i>)										x
Bufflehead (<i>Bucephala albeola</i>) ^{d,e,g}										x
Hooded Merganser (<i>Lophodytes cucullatus</i>) ^{d,e,g}								x		x
Common Merganser (<i>Mergus merganser</i>) ^{d,e,g}										x
Red-breasted Merganser (<i>Mergus serrator</i>) ^g										x
Ruddy Duck (<i>Oxyura jamaicensis</i>) ^{d,e,g}										x
FALCONIFORMES Turkey Vulture (<i>Cathartes aura</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Osprey (<i>Pandion haliaetus</i>) ^{d,e,g,h}										x
Bald Eagle (<i>Haliaeetus leucocephalus</i>) ^{d,e,g,i}	x		x			x	x	x	x	x
Northern Harrier (<i>Circus cyaneus</i>) ^{d,e,g,h}		x	x	x		x			x	
Broad-winged Hawk (<i>Buteo platypterus</i>) ^{e,g}								x		

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Swainson=s Hawk (<i>Buteo swainsoni</i>) ^{d,e,g}	x	x	x	x	x	x	x	x	x	
Red-tailed Hawk (<i>Buteo jamaicensis</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Sharp-shinned Hawk (<i>Accipiter striatus</i>) ^{d,e,g}	x							x		
Ferruginous Hawk (<i>Buteo regalis</i>) ^{d,e,g,h,i}	x	x	x	x	x	x	x	x	x	
Rough-legged Hawk (<i>Buteo lagopus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Northern Goshawk (<i>Accipiter gentilis</i>) ^{d,e,g,i}	x							x		
Cooper=s Hawk (<i>Accipiter cooperii</i>) ^{d,e,g}	x							x		
Golden Eagle (<i>Aquila chrysaetos</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
American Kestrel (<i>Falco sparverius</i>) ^{d,e,g,h}	x							x		
Merlin (<i>Falco columbarius</i>) ^{d,e,g}	x							x		
Peregrine Falcon (<i>Falco peregrinus</i>) ^{d,e,i}	x	x	x	x	x	x	x	x	x	x
Gyr Falcon (<i>Falco rusticolus</i>) ^{d,e,g}	x	x	x	x	x	x	x	x	x	x
Prairie Falcon (<i>Falco mexicanus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
GALLIFORMES Gray Partridge (<i>Perdix perdix</i>) ^{d,e,g,h}		x	x			x			x	
Ring-necked Pheasant (<i>Phasianus colchicus</i>) ^{d,e,g,h}			x			x		x	x	
Ruffed Grouse (<i>Bonasa umbellus</i>) ^{d,e,g}	x							x		
Sage Grouse (<i>Centrocercus urophasianus</i>) ^{d,e,g}		x	x	x		x			x	
Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Wild Turkey (<i>Meleagris gallopavo</i>) ^{d,e,g,h}	x						x	x	x	
Chukar (<i>Alectoris chukar</i>) ^{g(only)}	x							x		
GRUIFORMES Virginia Rail (<i>Rallus limicola</i>) ^g										x
Sora (<i>Porzana carolina</i>) ^{d,g,h}										x
American Coot (<i>Fulica americana</i>) ^{d,e,g,h}										x

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE- WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/ DISTURBED PASTURE	AQUATIC ^c
Sandhill Crane (<i>Grus canadensis</i>) ^{d,e,g,h}									x	x
Whooping Crane (<i>Grus americana</i>) ^g									x	x
CHARADRIIFORMES Black-bellied Plover (<i>Pluvialis squatarola</i>) ^g										x
Semipalmated Plover (<i>Charadrius semipalmatus</i>) ^{e,g}										x
Mountain Plover (<i>Charadrius montanus</i>) ^(only)		x							x	
Killdeer (<i>Charadrius vociferus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	x
American Avocet (<i>Recurvirostra americana</i>) ^{d,e,g}										x
Greater Yellowlegs (<i>Tringa melanoleuca</i>) ^{d,e,g}										x
Lesser Yellowlegs (<i>Tringa flavipes</i>) ^{e,g}										x
Solitary Sandpiper (<i>Tringa solitaria</i>) ^{d,e,g,h}										x
Willet (<i>Catoptrophorus semipalmatus</i>) ^{d,e,g}		x								x
Spotted Sandpiper (<i>Actitis macularia</i>) ^{d,e,g,h}										x
Upland Sandpiper (<i>Bartramia longicauda</i>) ^{d,e,g,h}		x	x	x					x	
Long-billed Curlew (<i>Numenius americanus</i>) ^{d,e,g,h}		x	x	x					x	x
Marbled Godwit (<i>Limosa fedoa</i>) ^{e,g}										x
Western Sandpiper (<i>Calidris mauri</i>) ^{e,g}										x
Semipalmated Sandpiper (<i>Calidris pusilla</i>) ^g										x
Least Sandpiper (<i>Calidris minutilla</i>) ^{d,g}										x
Stilt Sandpiper (<i>Calidris himantopus</i>) ^g										x
White-rumped Sandpiper (<i>Calidris fuscicollis</i>) ^{g (only)}		x								
Pectoral Sandpiper (<i>Calidris melanotos</i>) ^{g (only)}		x								
Baird's Sandpiper (<i>Calidris bairdi</i>) ^{g (only)}		x								
Long-billed Dowitcher (<i>Limnodromus scolopaceus</i>) ^{d,e,g}										x

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Common Snipe (<i>Gallinago gallinago</i>) ^{d,e,g}										x
Wilson=s Phalarope (<i>Phalaropus tricolor</i>) ^{d,e,g,h}										x
Red-necked Phalarope (<i>Phalaropus lobatus</i>) ^g										x
Franklin=s Gull (<i>Larus pipixcan</i>) ^{d,e}									x	x
Bonaparte=s Gull (<i>Larus philadelphia</i>) ^g									x	x
Ring-billed Gull (<i>Larus delawarensis</i>) ^{d,e}									x	x
California Gull (<i>Larus californicus</i>) ^e									x	x
Herring Gull (<i>Larus argentatus</i>)									x	x
Caspian Tern (<i>Sterna caspia</i>) ^e										x
Common Tern (<i>Sterna hirundo</i>)										x
Forster=s Tern (<i>Sterna forsteri</i>)										x
Least Tern (<i>Sterna antillarum</i>) ^{g,h,i}										x
Black Tern (<i>Chlidonias niger</i>) ^{e,g,h}										x
COLUMBIFORMES Rock Dove (<i>Columba livia</i>) ^{d,e,g,h}	x						x	x	x	
Mourning Dove (<i>Zenaidura macroura</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>) ^{d,e,g}		x						x	x	
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>) ^g		x						x	x	
STRIGIFORMES Barn Owl (<i>Tyto alba</i>) ^g								x	x	
Eastern Screech-Owl (<i>Otus asio</i>) ^{d,e,g}	x							x		
Great Horned Owl (<i>Bubo virginianus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Burrowing Owl (<i>Speotyto cunicularia</i>) ^{d,e,g,h,i}		x	x	x		x	x		x	
Long-eared Owl (<i>Asio otus</i>) ^{d,g}	x						x	x		
Short-eared Owl (<i>Asio flammeus</i>) ^{d,e,g,h}		x	x	x	x	x			x	

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Northern Saw-whet Owl (<i>Aegolius acadicus</i>) ^{d,e,g}	x								x	
Snowy Owl (<i>Nyctea scandiaca</i>) ^{g(only)}		x								
CAPRIMULGIFORMES Common Nighthawk (<i>Chordeiles minor</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Common Poorwill (<i>Phalaenoptilus nuttallii</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
APODIFORMES Chimney Swift (<i>Chaetura pelagica</i>) ^{d,g,h}							x			x
White-throated Swift (<i>Aeronautes saxatalis</i>) ^{d,e}							x			x
CORACIIFORMES Belted Kingfisher (<i>Ceryle alcyon</i>) ^{d,e,g}										x
PICIFORMES Lewis= Woodpecker (<i>Melanerpes lewis</i>) ^{e,g}	x							x		
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) ^{d,e,g,h}	x							x		
Red-naped Sapsucker (<i>Sphyrapicus nuchalis</i>) ^{d,g}	x							x		
Downy Woodpecker (<i>Picoides pubescens</i>) ^{d,e,g,h}	x							x		
Hairy Woodpecker (<i>Picoides villosus</i>) ^{d,e,g}	x							x		
Black-backed Woodpecker (<i>Picoides arcticus</i>) ^{g,h}	x							x		
Northern Flicker (<i>Colaptes auratus</i>) ^{d,e,g,h}	x							x		
PASSERIFORMES Western Wood-Pewee (<i>Contopus sordidulus</i>) ^{d,e,g,h}	x							x		
Olive-sided Flycatcher (<i>Contopus cooperi</i>) ^{h(only)}								x		
Willow Flycatcher (<i>Empidonax traillii</i>) ^g	x							x		
Least Flycatcher (<i>Empidonax minimus</i>) ^{d,e,g,h}	x							x		
Dusky Flycatcher (<i>Empidonax oberholseri</i>) ^{g,h}	x							x		
Say=s Phoebe (<i>Sayornis saya</i>) ^{d,e,g,h}	x		x	x	x	x	x	x	x	
Cassin=s Kingbird (<i>Tyrannus vociferans</i>) ^{e,g,h}		x	x	x	x	x	x	x	x	
Western Kingbird (<i>Tyrannus verticalis</i>) ^{d,e,g,h}		x	x	x	x	x	x	x	x	

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Eastern Kingbird (<i>Tyrannus tyrannus</i>) ^{d,e,g,h}		x	x	x	x	x	x	x	x	
Horned Lark (<i>Eremophila alpestris</i>) ^{d,e,g,h}		x							x	
Tree Swallow (<i>Tachycineta bicolor</i>) ^{d,e,g,h}	x							x	x	x
Violet-green Swallow (<i>Tachycineta thalassina</i>) ^{d,e,g,h}	x						x	x	x	x
Northern Rough-winged Swallow (<i>Stelgidopteryx serripennis</i>) ^{d,g,h}	x						x	x	x	x
Bank Swallow (<i>Riparia riparia</i>) ^{d,e,g,h}									x	x
Cliff Swallow (<i>Hirundo pyrrhonota</i>) ^{d,e,g,h}							x		x	x
Barn Swallow (<i>Hirundo rustica</i>) ^{d,e,g,h}								x	x	x
Gray Jay (<i>Perisoreus canadensis</i>) ^g	x							x		
Blue Jay (<i>Cyanocitta cristata</i>) ^{g(only)}	x							x		
Pinyon Jay (<i>Gymnorhinus cyanocephalus</i>) ^{d,e,g,h}	x						x	x		
Clark=s Nutcracker (<i>Nucifraga columbiana</i>) ^{d,e,g,h}	x						x	x		
Black-billed Magpie (<i>Pica pica</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
American Crow (<i>Corvus brachyrhynchos</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Common Raven (<i>Corvus corax</i>) ^{e,g}	x							x		
Black-capped Chickadee (<i>Parus atricapillus</i>) ^{d,e,g,h}	x							x		
Mountain Chickadee (<i>Poecile gambeli</i>) ^{g(only)}	x									
Red-breasted Nuthatch (<i>Sitta canadensis</i>) ^{d,e,g,h}	x							x		
White-breasted Nuthatch (<i>Sitta carolinensis</i>) ^{d,e,g,h}	x							x		
Pygmy Nuthatch (<i>Sitta pygmaea</i>) ^{g(only)}	x									
Brown Creeper (<i>Certhia americana</i>) ^{d,g}	x							x		
Rock Wren (<i>Salpinctes obsoletus</i>) ^{d,e,g,h}							x			
Canyon Wren (<i>Catherpes mexicanus</i>) ^{d,g}							x			

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
House Wren (<i>Troglodytes aedon</i>) ^{d,e,g,h}								x	x	
Winter Wren (<i>Troglodytes troglodytes</i>)								x		
Marsh Wren (<i>Cistothorus palustris</i>) ^{d,g}										x
Golden-crowned Kinglet (<i>Regulus satrapa</i>) ^{d,g}	x							x		
Eastern Bluebird (<i>Sialia sialis</i>) ^{d,g}								x		
Mountain Bluebird (<i>Sialia currucoides</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Townsend=s Solitaire (<i>Myadestes townsendi</i>) ^{d,e,g}	x							x		
Veery (<i>Catharus fuscescens</i>) ^{d,g,h}	x							x		
Swainson=s Thrush (<i>Catharus ustulatus</i>) ^{d,g}	x							x		
Wood Thrush (<i>Hylocichla mustelina</i>)	x							x		
Gray-cheeked Thrush (<i>Catharus minimus</i>) ^{g(only)}	x							x		
American Robin (<i>Turdus migratorius</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Gray Catbird (<i>Dumetella carolinensis</i>) ^{d,e,g,h}	x							x		
Sage Thrasher (<i>Oreoscoptes montanus</i>) ^{d,e,g,h}			x	x	x	x	x			
Brown Thrasher (<i>Toxostoma rufum</i>) ^{d,e,g,h}								x		
American Pipit (<i>Anthus rubescens</i>) ^d		x							x	
Sprague=s Pipit (<i>Anthus spragueii</i>) ^{g,h}		x							x	
Bohemian Waxwing (<i>Bombycilla garrulus</i>) ^{d,e,g,h}	x							x		
Cedar Waxwing (<i>Bombycilla cedrorum</i>) ^{d,e,g,h}	x							x		
Northern Shrike (<i>Lanius excubitor</i>) ^{d,e,g}	x	x	x	x	x	x	x	x	x	
Loggerhead Shrike (<i>Lanius ludovicianus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
European Starling (<i>Sturnus vulgaris</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Solitary Vireo (<i>Vireo solitarius</i>) ^{d,e,g}								x		
Warbling Vireo (<i>Vireo gilvus</i>) ^{d,e,g,h}	x							x		

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE- WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/ DISTURBED PASTURE	AQUATIC ^c
Plumbeous Vireo (<i>Vireo plumbeus</i>) ^{h(only)}								x		
Red-eyed Vireo (<i>Vireo olivaceus</i>) ^{d,e,g}								x		
Tennessee Warbler (<i>Vermivora peregrina</i>)								x		
Orange-crowned Warbler (<i>Vermivora celata</i>) ^{e,g}	x									
Yellow Warbler (<i>Dendroica petechia</i>) ^{d,e,g,h}								x		
Magnolia Warbler (<i>Dendroica magnolia</i>) ^e								x		
Yellow-rumped Warbler (<i>Dendroica coronata</i>) ^{d,e,g,h}	x							x		
Blackpoll Warbler (<i>Dendroica striata</i>) ^{g(only)}	x									
Black-and-White Warbler (<i>Mniotilta varia</i>) ^g								x		
American Redstart (<i>Setophaga ruticilla</i>) ^{d,g,h}	x							x		
Ovenbird (<i>Seiurus aurocapillus</i>) ^{d,g,h}	x							x		
Common Yellowthroat (<i>Geothlypis trichas</i>) ^{d,e,g,h}								x		
Yellow-breasted Chat (<i>Icteria virens</i>) ^{d,e,g,h}								x		
Western Tanager (<i>Piranga ludoviciana</i>) ^{d,e,g,h}	x							x		
Black-headed Grosbeak (<i>Pheucticus melanocephalus</i>) ^{d,e,g,h}	x							x		
Lazuli Bunting (<i>Passerina amoena</i>) ^{d,e,g,h}								x		
Indigo Bunting (<i>Passerina cyanea</i>) ^{g,h}								x		
Green-tailed Towhee (<i>Pipilo chlorurus</i>) ^{e,g}					x		x			
Spotted Towhee (<i>Pipilo maculatus</i>) ^{d,e,g,h}	x				x		x	x		
American Tree Sparrow (<i>Spizella arborea</i>) ^{d,g,h}	x							x		
Chipping Sparrow (<i>Spizella passerina</i>) ^{d,e,g,h}	x							x		
Clay-colored Sparrow (<i>Spizella pallida</i>) ^{d,g,h}		x	x	x						
Brewer=s Sparrow (<i>Spizella breweri</i>) ^{d,e,g,h}		x	x	x						
Field Sparrow (<i>Spizella pusilla</i>) ^{d,g,h}									x	

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Vesper Sparrow (<i>Pooecetes gramineus</i>) ^{d,e,g,h}		x	x	x	x	x	x		x	
Lark Sparrow (<i>Chondestes grammacus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x		x	
Lark Bunting (<i>Calamospiza melanocorys</i>) ^{d,e,g,h}		x	x	x						
Savannah Sparrow (<i>Passerculus sandwichensis</i>) ^{d,e,g,h}		x	x	x						
Baird=s Sparrow (<i>Ammodramus bairdii</i>) ^g		x							x	
Grasshopper Sparrow (<i>Ammodramus savannarum</i>) ^{d,e,g,h}		x	x	x					x	
Fox Sparrow (<i>Passerella iliaca</i>) ^d								x		
Song Sparrow (<i>Melospiza melodia</i>) ^{d,e,g,h}	x	x	x	x				x	x	
White-crowned Sparrow (<i>Zonotrichia leucophrys</i>) ^{d,e}	x							x		
Harris's Sparrow (<i>Zonotrichia querula</i>) ^{g(only)}	x							x		
White-throated Sparrow (<i>Zonotrichia albicollis</i>) ^{g(only)}	x							x		
Dark-eyed Junco (<i>Junco hyemalis</i>) ^{d,e,g,h}	x							x		
McCown=s Longspur (<i>Calcarius mccownii</i>) ^g		x								
Lapland Longspur(<i>Calcarius lapponicus</i>) ^g		x								
Chestnut-collared Longspur (<i>Calcarius ornatus</i>) ^{g,h}		x								
Snow Bunting (<i>Plectrophenax nivalis</i>) ^{d,g}		x	x	x	x	x			x	
Bobolink (<i>Dolichonyx oryzivorus</i>) ^g		x	x	x						
Red-winged Blackbird (<i>Agelaius phoeniceus</i>) ^{d,e,g,h}								x		x
Western Meadowlark (<i>Sturnella neglecta</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Yellow-headed Blackbird (<i>Xanthocephalus xanthocephalus</i>) ^{d,e,g,h}										x
Brewer=s Blackbird (<i>Euphagus cyanocephalus</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	
Common Grackle (<i>Quiscalus quiscula</i>) ^{d,e,g,h}	x							x		
Brown-headed Cowbird (<i>Molothrus ater</i>) ^{d,e,g,h}	x	x	x	x	x	x	x	x	x	

Table 1. (Continued)

SPECIES ^b	PINE/JUNIPER	PRAIRIE	SILVER SAGE	BIG SAGE	SUMAC	GREASE-WOOD	BREAKS	DECIDUOUS, TREE/SHRUB	AGRICULTURAL/DISTURBED PASTURE	AQUATIC ^c
Bullock=s Oriole (<i>Icterus bullockii</i>) ^{d,e,g,h}	x							x		
Orchard Oriole (<i>Icterus spurius</i>) ^{g,h(only)}			x	x						
Black Rosy-Finch (<i>Leucosticte atrata</i>)	x									
Grey-crowned Rosy Finch (<i>Leucosticte tephrocotis</i>) ^d	x									
Cassin=s Finch (<i>Carpodacus cassinii</i>) ^g	x							x		
House Finch (<i>Carpodacus mexicanus</i>) ^{g,h}	x							x	x	
Purple Finch (<i>Carpodacus purpureus</i>) ^{g(only)}	x							x		
Pine Grosbeak (<i>Pinicola enucleator</i>) ^d	x									
Dickcissel (<i>Spiza americana</i>) ^{g(only)}		x							x	
Red Crossbill (<i>Loxia curvirostra</i>) ^{d,e,g,h}	x									
Common Redpoll (<i>Carduelis flammea</i>) ^{d,g}	x							x		
Hoary Redpoll (<i>Carduelis hornemanni</i>) ^g	x							x		
Pine Siskin (<i>Carduelis pinus</i>) ^{d,e,g,h}	x							x		
American Goldfinch (<i>Carduelis tristis</i>) ^{d,e,g,h}		x							x	
Evening Grosbeak (<i>Coccothraustes vespertinus</i>) ^{d,g}	x							x	x	
House Sparrow (<i>Passer domesticus</i>) ^{d,e,g,h}									x	

^aHabitat use determined from DeGraaf et al. (1991) and Ehrlich et al. (1988) (birds), Genter and Jurist (1995) (bats), Holton and Johnson (1996) (fish), Reichel and Flath (1995) (amphibians and reptiles), Montana Bird Distribution Committee (1996) (birds), Montana Fisheries Information System (2002), Montana Natural Heritage Program (1997) (mammals), Thompson (1982) (mammals), various wildlife monitoring reports from the Monteco Mine, Decker Mines and Spring Creek Mine, and Whitaker, J.O. (1988) (mammals).

^cFisheries zones I-V adapted from Elser et al. (1977) as shown in Figure 1.

^dReported in various monitoring reports (1978-1989) for the Montco Mine.

^eReported in various monitoring reports from the Decker Mines (1976-1977) and Spring Creek Mine (1994-1997), and the Tongue River Basin Project DEIS (1995).

^fMontana Fisheries Information System 2002.

^gReported as predicted occurrence in Redmond, et al. 1998.

^hMontana Bird Distribution Online Database 2001.

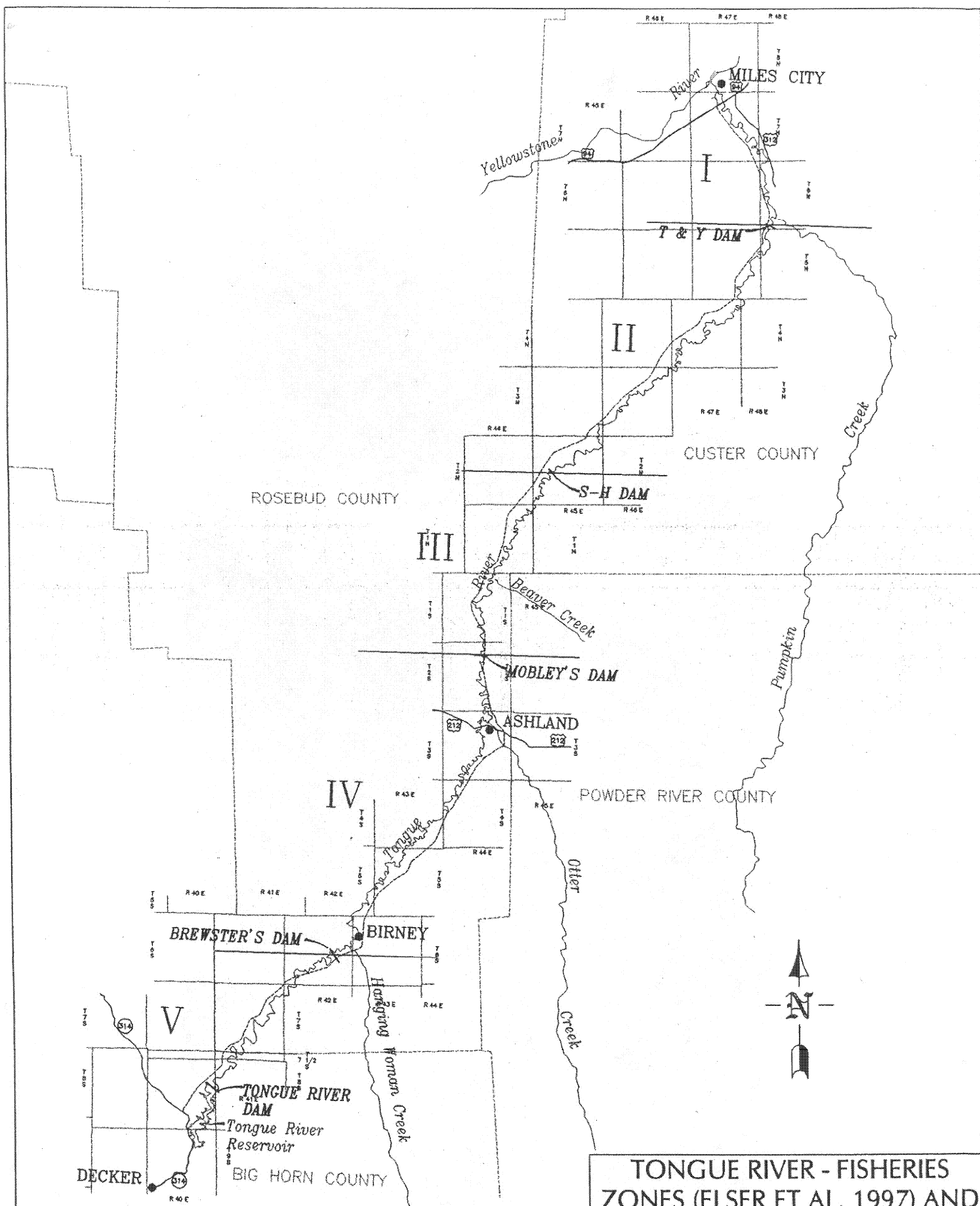
ⁱMontana Natural Heritage Program (MTNHP) 2003a.

Table 1. (Continued)

^j Montana Natural Heritage Program (MTNHP) 2003b.

^k Maxell et. al. 2003.

^l Sasse, D. 2003, personal comm.



**TONGUE RIVER - FISHERIES
ZONES (ELSER ET AL. 1997) AND
MAJOR DIVERSIONS**

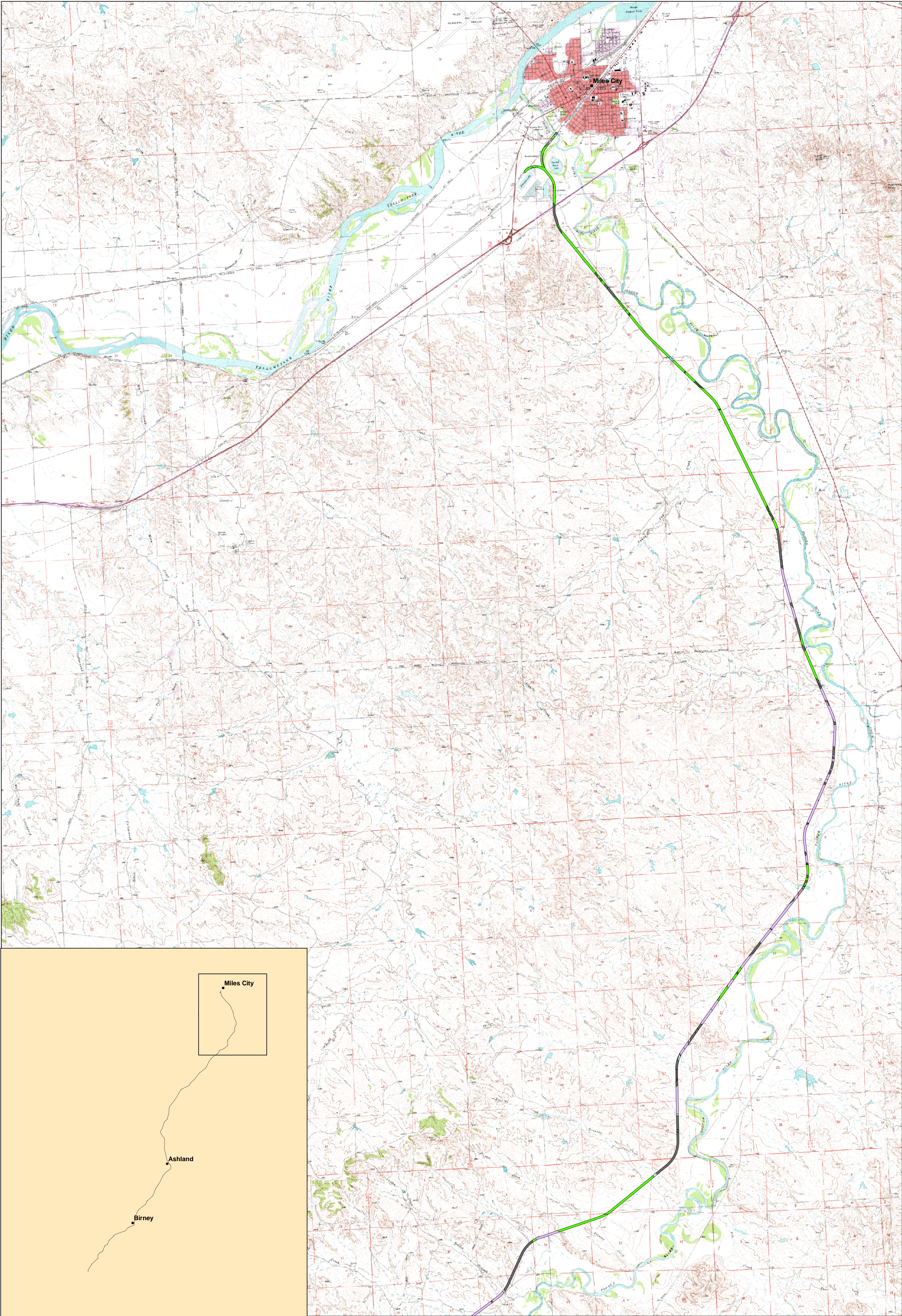
TONGUE RIVER RAILROAD

FIGURE 1



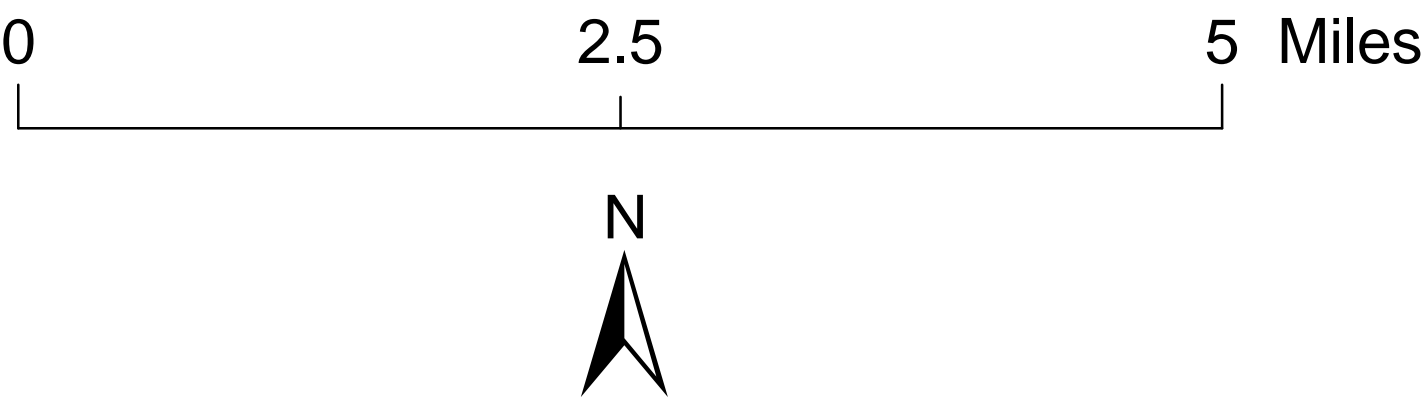
WESTECH
Environmental Services, Inc.
P.O. Box 6045
Helena, Montana 59604

SCALE: NTS
DATE: FEBRUARY 1999
DRAWN BY: DC
CHECKED BY:
FILE: TRRR99A08.DWG



Legend

Proposed Route	Pine/Juniper
Habitat Type	Prairie
Deciduous Tree / Shrub	Prairie/Shrub
Agric./Dist/Pasture	Aquatic
Breaks	Urban/Developed



ENTRIX

Figure 2
Habitat Map
Tongue River Railroad

Proj.3079712 Date: 4/2004